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IS 13649 (1993): Textile - Polyethylene lined jute bags for packing tea [TXD 3: Jute and Jute Products]

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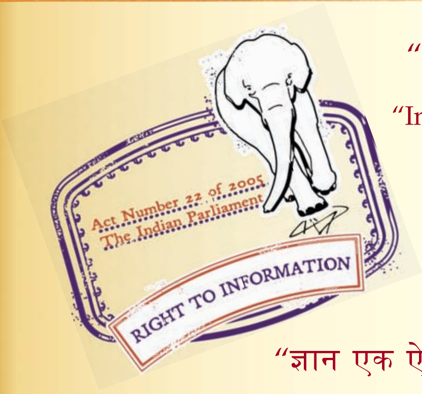

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Indian Standard

TEXTILES — POLYETHYLENE LINED JUTE BAGS FOR PACKING TEA — SPECIFICATION

UDC 621·798·151 : 677·13 : 678·742·2 : 663·95

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

March 1993 **Price Group 3**

Jute and Jute Products Sectional Committee, TX 03

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textile Division Council.

This standard has been formulated keeping in view considerable use of polyethylene lined jute bags for packing tea within the country. It is based on the 'Recommended Specification of polyethylene lined jute bags suitable for bulk packaging of 28 kg to 30 kg of tea' issued by Tea Board, Calcutta.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 2 OCTOBER 2005
TO
IS 13649 : 1993 TEXTILES — POLYETHYLENE LINED JUTE BAGS FOR PACKING TEA — SPECIFICATION

(*Page* 1 *clause* 4.1) — Insert the following note at the end of paragraph:

'NOTE — The mass of fabric in g/m^2 is given for guidance only.'

(TX 03)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 1 JUNE 1993
TO
IS 13649 : 1993 TEXTILES — POLYETHYLENE LINED JUTE BAGS FOR PACKING TEA — SPECIFICATION

a) *Clause* 7.1 — Read 'Annex' *for* 'Appendix' in lines 2 and 4.

b) *Annex A* — In the title of IS 10146 : 1982, read 'safe' *for* 'sale'

c) *Annex B* — In the informal table under **B-2.1**, read '251 to 300' *for* '301 to 350'.

(TX 03)

Reprography Unit, BIS, New Delhi, India

Indian Standard

TEXTILES — POLYETHYLENE LINED JUTE BAGS FOR PACKING TEA — SPECIFICATION

1 SCOPE

1.1 This standard prescribes the requirements of polyethylene lined jute bags suitable for packing 30 kg tea.

2 REFERENCE

2.1 The Indian Standards listed at Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions as given in IS 5476 : 1986 along with the following definition shall apply.

3.1.1 Gusset

A fold inserted in the edge of a sack.

4 MANUFACTURE

4.1 Jute Bag

The bag shall be made out of fabric woven from jute yarn in double warp and single weft, plain weave and having construction 475 g/m^2; 47 (double) ends/dm $\times$ 55 picks/dm. The bag shall be made from single piece of cloth in which the warp is running along the width of the bag and the mouth of the bag is formed by the selvedge.

4.1.1 *Handle*

Each bag shall be provided with a pair of suitable handles at the mouth with loop length of 30 cm (*see* Fig. 1).

4.2 Liner Bag

The liner bag shall be made out of high molecular high density polyethylene (HMHDPE) film (*see* IS 10889 : 1984) of such thickness that corresponds to its mass of 34·5 g/m^2 $\pm$ 10 percent (37.5 microns or 150 gauge).

4.2.1 The liner shall be of food grade (*see* IS 10146 : 1982) odourless and made from virgin material only. The liner bag shall be made by heat sealing the edge of the liner and same shall be placed loosely inside the jute bag.

4.3 Seam

One side the bottom of the bag shall be stitched with two rows of lock or chain stitches separated from each other by about 5 mm with the outer row of stitching approximately 10 mm from the edge of the bag. The stitching should be done with a fold over seam to a depth of about 25 mm so that the stitches pass through all the four layers of the fabric.

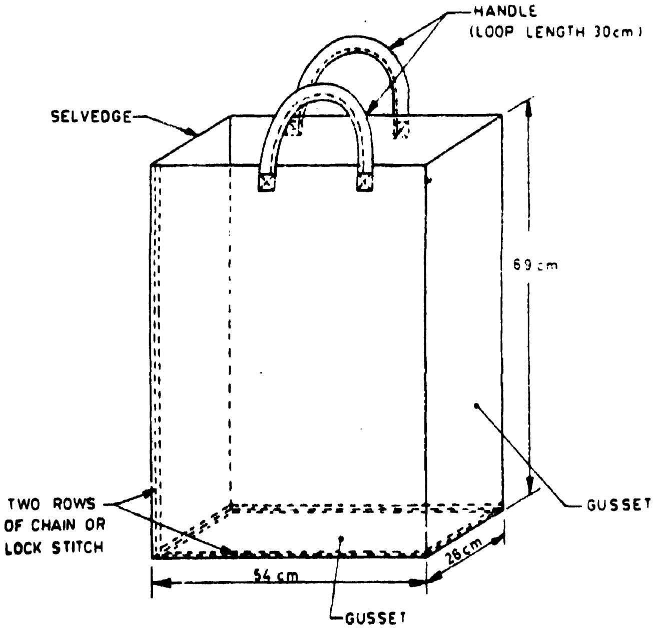

FIG. 1 SKETCH OF A TYPICAL JUTE BAG FOR PACKING TEA

4.3.1 The twine used for stitching shall be rayon cord, 2 ply. The tex (denier) of the cord shall be of minimum 128 (1150).

4.3.2 The number of stitches per decimetre should be between 11 and 13.

4.4 Gusset

The bag shall have gusset at the bottom of the bag and the same shall lie folded within the bag after the side is stitched.

4.5 Freedom from Defects

4.5.1 The film used for manufacturing liner bag shall be free from pinholes, patches, tears, blisters and any other visible defects.

4.5.2 The jute fabric used for manufacturing bag shall be free from mildew, oil stains and any odour. The fabric shall also be generally free from weft bars, multiple broken yarns in warp and weft, holes, smash and floats.

5 REQUIREMENTS

5.1 Liner Bag

The dimensions of each of the inner polyethylene liner bag shall conform to the following requirements:

Sl No.	*Characteristic*	*Requirement*	*Method of Test*
(1)	(2)	(3)	(4)
i)	Outside length, cm	92^{+3}_{-0}	C-4
ii)	Outside width, cm	82^{+3}_{-0}	C-4

NOTE — The dimensions of liner bag correspond to the dimensions of jute bags specified in Table 1. Other dimensions as agreed to between the buyer and the seller may be used depending upon the size of jute bags.

5.2 Jute Bag

The jute bags shall conform to the requirements as given in Table 1.

5.3 Contract Regain of Jute Bag

The contract moisture regain of jute bag shall be 16 percent.

6 PACKING AND MARKING

6.1 Packing

The bags shall be packed in trusses.

6.1.1 The number of bags per truss shall be as specified in the contract.

6.2 Marking

Unless otherwise specified, the following information shall be marked on the trusses:

a) Name of the manufacturer;
b) Description of material;
c) Number of bags per truss;
d) Lot number of the truss; and
e) Any other particulars required by the buyer or by the law in force.

6.2.1 Each truss may also be marked with the Standard Mark.

7 SAMPLING AND INSPECTION

7.1 Unless otherwise specified, the procedure for sampling shall be as given in Appedix B and the procedure for testing and inspection shall be as given in Appendix C.

8 CRITERIA FOR CONFORMITY

8.1 The lot shall be considered as conforming to the requirements of the standard, if the following conditions are satisfied:

a) The total of the corrected net mass of the trusses under test is not less than the total contract mass of the trusses.

b) The number of bags in each truss under test is not less than the declared number.

c) The dimensions of at least 90 percent of the bags under test are in accordance with the requirements specified in Table 1. In the remaining bags, no bag shall have dimensions less than 1·5 cm below the specified value.

d) The mass of at least 90 percent of the bags under test is within ± 10 percent of the nominal mass specified (*see* Table 1) and the average mass of the bags under test conforms to the requirements specified (*see* Table 1).

e) The dimensions of all the liner bags tested are within the specified tolerances, and thickness (or mass in g/m^2) of the liner used conforms to the requirements prescribed in **4.2**.

f) The average values of (a) breaking strength of the fabric and seam, (b) ends and picks per dm, (c) moisture regain, and (d) oil content of the bags under test, conform to the requirements specified in Table 1.

Table 1 Requirements of Jute Bags

(*Clauses* 5.1, 5.2, *and* 8.1)

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of Test (4)
i)	Outside length, cm	69^{+3}_{-0}	C-3
ii)	Outside width, cm	54^{+3}_{-0}	C-3
iii)	Width of gusset at bottom, cm	26^{+3}_{-1}	C-3
iv)	Breaking strength of fabric on 10 × 20 cm strip, N (kgf*), *Min*		C-6 (Revelled strip test method)
	a) Warpway	1080 (110)	
	b) Weftway	1370 (140)	
v)	Breaking strength of seam on 10 × 20 cm strip, N (kgf*), *Min*		C-7
	a) Side seam	490 (50)	
	b) Bottom seam	390 (40)	
vi)	Ends per dm	47 ± 2 (2 ends working on one)	C-5
vii)	Picks per dm	55 ± 2	C-5
viii)	Mass per bag, g	670^{+8}_{-2} percent	C-2
ix)	Moisture regain percent, *Max*	17	C-1
x)	Oil content on dry de-oiled material basis, *Max*	2	C-8
xi)	Corrected net mass of the trusses	Not less than the contract mass of the trusses	C-9

NOTES

1 The dimensions indicated in the table are applicable for packing 30 kg tea of normal bulk density as agreed to between the buyer and the seller. Since the size of the bag depends upon the bulk density of the tea to be packed, other sizes/dimensions as agreed to between the buyer and the seller may also be used. However, the same tolerances as indicated in this Table shall be made applicable for other dimensions.

2 Mass of the bags of other dimensions shall be calculated on the basis of the following parameters:

i) Area of the fabric including the seam used in the bag.

ii) The fabric used for making the handle to be stitched with the bag.

iii) The yarn used for stitching the bag including the handle.

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1 N = 0.102 kgf approximately.

ANNEX A

(*Clause* 2.1)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
1963 : 1981	Methods for determination of threads per unit length in woven fabrics (*second revision*)
1969 : 1985	Methods for determination of breaking load and elongation of woven textile fabrics (*second revision*)
2969 : 1974	Methods for determination of oil content of jute yarn and fabric (*first revision*)
5476 : 1986	Glossary of terms relating to jute (*first revision*)
9030 : 1979	Method for determination of seam strength of jute fabrics including their laminates
10146 : 1982	Polyethylene for its sale use in contact with foodstuffs, pharmaceutical and drinking water
10889 : 1984	High density polyethylene films

ANNEX B

(*Clause* 7.1)

SAMPLING

B-0 Lot

B-0.1 All the trusses of polyethylene lined jute bags for packing tea of same dimensions supplied to a buyer against one despatch note, shall constitute a lot.

B-1 SAMPLING PROCEDURE FOR GROSS MASS

B-1.1 For evaluating the gross mass of the trusses, 10 percent of the trusses, selected from the lot, shall constitute the test sample.

B-2 SAMPLING PROCEDURE FOR OTHER REQUIREMENTS

B-2.1 For assessing conformity to the requirements other than gross mass of the bale the following minimum number of trusses shall be selected at random from the lot:

Number of Trusses in the Lot	*No. of Trusses to be Drawn and Opened for Inspection*
Up to 10	1
11 to 20	2
21 to 100	3
101 to 150	4
151 to 200	5
201 to 250	6
301 to 350	7
351 to 400	8
401 to 500	9
501 and above	10 + 1 for every 100 trusses or part thereof above 501 trusses.

B-2.2 For the trusses selected as above, the test samples shall be drawn as follows:

Sl No.	*Tests*	*Test Sample*
i)	Dimension, ends/dm, picks/dm, mass and moisture regain of jute bag and dimensions of liner bag	10 percent of the bags
ii)	Breaking strength of jute bag	
	a) fabric	2 bags from each truss subject to a minimum of five bags
	b) seam	
iii)	Oil content percent of jute bag	2 bags from each truss subject to a minimum of six bags.

ANNEX C

(*Clause* 7.1)

TESTING AND INSPECTION

C-0 TESTING AND INSPECTION PROCEDURE

C-0.1 Testing and inspection of the lot as laid down below shall be carried out on the samples drawn in accordance with Annex B.

C-1 MOISTURE REGAIN

C-1.1 Determine the moisture regain in each bag (**B-2.2**) after opening the trusses (**B-2.1**) by the use of a suitable moisture meter. After opening the trusses about 10 minutes time be allowed to lapse before measuring moisture to enable the cloth to attain conditions for the normal use of moisture meter.

NOTE — Indian Jute Industries' Research Association, IJIRA Moisture Meter* may be used for the purpose. This meter works on the principle of measuring the electrical resistance which changes with moisture content in the material. The specimen (jute product) is placed under the electrode gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through the electrodes is amplified and recorded by the meter calibrated against the actual moisture regain, based on oven-dry method of the material. A separate chart, calibrating the readings of the actual moisture regain, based on oven-dry method of the material may also be used. The instrument shall be operated according to the manufacturer's instructions.

---

*Mention of the name of the specific instrument is not intended to promote or give preference to the use of that instrument over others not mentioned.

C-2 MASS PER BAG

C-2.1 Weigh each jute bag (*see* **B-2.2**) to the nearest 5 g after determining the moisture regain of the bag as indicated in **C-1.1**. Determine the corrected net mass of the bag at contract regain. Weigh the liner bag separately and add this mass to the corrected net mass of the jute bag.

C-3 LENGTH, WIDTH AND GUSSET WIDTH (BOTTOM) OF JUTE BAG

C-3.1 Lay each bag flat on a table free from creases and wrinkles and measure the outside length and width of gusset at the bottom nearest to 0·5 cm of all the bags under test. The measurements shall be taken about the centre.

C-4 LENGTH AND WIDTH OF POLYETHYLENE BAG

C-4.1 Lay each bag flat on a smooth table and make it free from creases or fold and then measure the outside length and width of the bag about the centre to the nearest 0·5 cm.

C-5 ENDS AND PICKS

C-5.1 Count the ends and picks from each bag as selected in **B-2.2** in one and two places respectively with a suitable gauge measuring 5 cm. Determine the average number of ends and picks per dm of the bags under test in accordance with IS 1963 : 1981.

C-6 BREAKING STRENGTH OF FABRIC

C-6.1 Test from each bag as selected in **B-2.2** two warpway and two weftway test specimens for breaking strength with 100 mm wide revelled strips and 200 mm between grips of a strength tester having a constant rate of traverse of 450 mm per minute according to IS 1969 : 1985.

C-7 BREAKING STRENGTH OF SEAM

C-7.1 Take two test specimen from each bag for breaking strength of seam, one from side and the other from the bottom of the bags (**B-2.2**). Test the breaking strength of each test specimen with 100 mm wide revelled strip taking 200 mm between the grips of a strength tester having a constant rate of traverse of 450 mm per minute in accordance with IS 9030 : 1979.

C-8 OIL CONTENT

C-8.1 Take from each bag as selected in **B-2.2** one representative strip weighing approximately 20 g and determine the oil content on dry de-oiled material basis in accordance with IS 2969 : 1974.

C-9 CORRECTED NET MASS OF TRUSSES

C-9.1 Determine the total gross mass (Wg) of the trusses in a test sample (**B-1.1**) from the gross mass of each truss weighed to the nearest kilogram.

C-9.2 Remove all the packing and binding materials of the trusses selected in **B-2.2** and weigh them together up to nearest kilogram. Calculate the average tare mass of the trusses and multiply it by the number of trusses weighed for gross mass (Wt).

C-9.3 The total net mass of the trusses under test, $Wn = Wg - Wt$.

C-9.4 Determine the average mass of the liner bag by weighing the total mass of 10 liner bags drawn at random out of the bags selected in **B-2.2** and dividing it by 10. Multiply the average mass of the liner bag with the total number of liner bags within the trusses selected (**B-1.1**) to find out the total mass of the liner bags (WL).

C-9.5 The total net mass of the trusses under test excluding the polyethylene bags as liner, $Wm = Wn - WL$.

C-9.6 Determine the total corrected net mass, W of the trusses (**B-1.1**) excluding the polyethylene bag as liner by using the following formula:

$$W = \frac{Wm \times (100 + \text{contract regain percent})}{\begin{array}{c}100 + \text{average moisture regain percent} \\ \text{of the trusses (\textit{see} \textbf{C-1})}\end{array}}$$

C-9.7 Determine the total corrected net mass of the trusses comprising both jute bags and polyethylene bags, as liner, by adding W and WL.

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